

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

RCRA Corrective Action Environmental Indicator (EI) RCRIS code (CA750) Migration of Contaminated Groundwater Under Control

Facility Name: Safety-Kleen Corporation

Facility Address: 116 Skyline Drive, South Plainfield, Middlesex County, New Jersey

Facility EPA ID#: NJD982270506

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EIs developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of “Migration of Contaminated Groundwater Under Control” EI

A positive “Migration of Contaminated Groundwater Under Control” EI determination (“YE” status code) indicates that the migration of “contaminated” groundwater has stabilized, and that monitoring will be conducted to confirm that contaminated groundwater remains within the original “area of contaminated groundwater” (for all groundwater “contamination” subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While final remedies remain the long-term objectives of the RCRA Corrective Action program, the EIs are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993 (GPRA). The “Migration of Contaminated Groundwater Under Control” EI pertains ONLY to the physical migration (i.e., further spread) of contaminated groundwater and contaminants within groundwater (e.g., non-aqueous phase liquids or NAPLs). Achieving this EI does not substitute for achieving other stabilization or final remedy requirements and expectations associated with sources of contamination and the need to restore, wherever practicable, contaminated groundwater to be suitable for its designated current and future uses.

Duration / Applicability of EI Determinations

EI Determination status codes should remain in the RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

Facility Information

The Safety-Kleen Corporation (S-K) facility is located at 116 Skyline Drive in South Plainfield, New Jersey. The 2.5-acre site is located in an area zoned for light industrial manufacturing operations and warehousing. The site is immediately surrounded by industrial properties, but residences are also present approximately 1,500 feet to the east. The Reading Railroad right-of-way and Interstate Highway 287 are

situated south of the S-K site. No schools, churches, public parks, or hospitals are known to exist within 0.5 mile of the site (Refs. 3 and 6). Several small tributaries to Bound Brook and Ambrose Brook are located in the area, along with two wetlands areas within 0.5 mile (Ref. 3).

The Skyline Drive property was purchased by S-K on April 30, 1987. At that time, the vacant property was owned by the Pulitzer family, and there is no known commercial or industrial use prior to S-K ownership (Refs. 1 through 3). Beginning in 1995, this site was used as an accumulation and storage point for hazardous and nonhazardous wastes such as spent solvents, mineral spirits, oil, and antifreeze. The New Jersey Department of Environmental Protection (NJDEP) issued Hazardous Waste Facility (HWF) Permit No. 1222B1HP01 to S-K on July 10, 1995, before the facility was operational. In response to regulatory changes, NJDEP revoked the original permit and reissued it as Permit No. 1222B1HP02 on December 31, 1997 (Ref. 4). The facility's HWF Permit was renewed for ten years on July 20, 2006 (Ref. 7).

There is one office/warehouse building on the site, and a separate return and fill (R/F) station for solvent transfers. A map of the site is provided as Figure B-7 in the May 2005 RCRA Permit Renewal Application (Ref. 6). There are two hazardous waste container storage areas (CSAs) at the S-K site: an area inside the warehouse with a capacity of 20,000 gallons, and an area within the R/F station with a capacity of 2,000 gallons. Hazardous wastes are also stored in a 15,000-gallon aboveground storage tank (AST). This AST and two 15,000-gallon clean mineral spirits ASTs are located within a single, concrete secondary containment structure (Refs. 5 and 6). The hazardous wastes carry a variety of RCRA characteristic waste codes, listed waste codes, and New Jersey codes for used oil (Ref. 2).

S-K provides a solvent distribution and spent solvent collection program. Drums of waste are picked up from customers or brought to the South Plainfield site from other S-K transfer facilities (Ref. 8). Within 72 hours of arrival, waste drums are unloaded into the CSAs, and bulk liquids are transferred into the AST. While on site, hazardous wastes may be consolidated and repackaged pending off-site shipment. S-K box and tanker trucks are periodically dispatched to the South Plainfield service center to pick up and transport spent solvents and other wastes to an S-K recycling facility in Clayton, New Jersey (Ref. 2). After recovery, clean product is returned to the facility for redistribution. In addition, trucks containing hazardous wastes are sometimes parked in designated areas for 10 days or less (Ref. 6).

References:

1. Letter from B. Strollo, NJDEP, to A. Dalto, Esq., re: ECRA Applicability. Dated September 8, 1987.
2. RCRA Facility Assessment Narrative. Prepared by EPA. Dated November 7, 1988.
3. S-K Proposed South Plainfield Facility Environmental Health and Impact Statement. Prepared by Environmental Quality Management, Inc. Dated August 1993.
4. Letter from J. Castner, NJDEP, to M. Fanek, S-K, re: Notice of Revocation and Reissuance of Hazardous Waste Facility Permit. Dated December 31, 1997.
5. Field Investigation Assignment Report. Prepared by NJDEP. Dated March 6, 2001.
6. RCRA Hazardous Waste Storage Permit Renewal Application – Revision 1. Prepared by S-K Corporation. Dated May 2005.
7. Hazardous Waste Facility Permit. Prepared by NJDEP. Issued July 20, 2006.
8. Letter from R. Confer, NJDEP, to M. Fanek, S-K, re: Receipt of Used Solvents from S-K's 10-Day Transfer Facilities. Dated January 8, 2007.

1. Has **all** available relevant/significant information on known and reasonably suspected releases to the groundwater media, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

 X If yes - check here and continue with #2 below.

 If no - re-evaluate existing data, or

 If data are not available, skip to #8 and enter “IN” (more information needed) status code.

Summary of Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs):

In November 1988, before the S-K facility became operational, NJDEP performed a RCRA Facility Assessment (RFA) at the site (Ref. 2). At that time, it was determined that four RCRA-regulated SWMUs would be present at the facility. These SWMUs are described below and are shown on Figure B-7 from the RCRA Hazardous Waste Storage Permit Renewal Application (Ref. 6).

SWMU 1, Spent Mineral Spirits Solvent AST: This unit was proposed and constructed as a 15,000-gallon carbon steel AST at the facility’s R/F station. The R/F station is identified on Figure B-7 adjacent to the transfer pad at the south end of the site. This horizontal tank is 10.5 feet in diameter and 15.67 feet long. The tank is painted white to reflect sunlight and minimize volatilization of spent solvents. The tank is also equipped with a high-level alarm to prevent overfilling. Drummed solvents arriving at the S-K facility are emptied into a wet dumpster and then pumped into the AST for storage pending transport via tanker truck to the S-K recycling center in Clayton, New Jersey. The dumpster has a capacity of 150 gallons, but that unit is not used for solvent storage. Secondary containment around the AST and dumpster consists of a steel-reinforced concrete dike. Because product tanks are also located within this structure, the secondary containment system was designed with a capacity is 33,660 gallons (Refs. 2 and 6). Several years after installation, S-K observed discoloration of the concrete coating on the interior surface of the tank farm secondary containment unit (Ref. 4). In January 2002, cracks in the containment walls were filled in, and the floor was covered with a polyurethane sealant. The tank footings were also sealed with a polyurethane sealant (Ref. 5). This unit remains in active operation.

SWMU 2, Container Storage Warehouse: This CSA is located inside the service center warehouse, shown at the center of the traffic loop on Figure B-7. This area is used to store permitted hazardous waste streams brought to the site from S-K customers. Although originally proposed for staging of up to 6,912 gallons of hazardous waste, the CSA was ultimately designed and constructed with a capacity of 20,000 gallons (Refs. 2 and 6). Secondary containment for this CSA is provided in the form of a sloped floor with collection trenches capable of holding up to 2,705 gallons. The trenches are closed at the surface and are emptied using a portable pump and sorbent materials (Ref. 6). This unit remains in active operation.

SWMU 3, Container Storage Accumulation Center: This CSA is located inside an enclosure at the facility’s R/F station. Roll-up doors at the front and rear of this unit allow for easy loading and unloading of incoming waste drums. Although it was originally proposed for staging of up to 69,120 gallons of drummed waste, this CSA is used for storage of up to only 2,000 gallons of hazardous waste (Refs. 2 and 6). Secondary containment for this CSA is provided in the form of a concrete dike measuring 20 feet by 15 feet by six inches high (Ref. 6). This unit remains in active operation.

SWMU 4, Waste Oil AST: This unit was proposed as a 15,000-gallon AST that would be used to store waste oil from automotive service centers until it was shipped out for refining. The AST was constructed within the same steel-reinforced concrete dike that provides secondary containment for the SWMU 1 AST (Ref. 2). However, this tank appears to only have been used for product storage (Ref. 3). For this reason, the tank has not been included in the facility's current HWF permit (Ref. 7). Accordingly, this unit need not be considered further in this EI determination.

Two additional findings were also identified in the RFA (Ref. 2). First, mounding was evident along the western and southern borders of the property and was possibly indicative of past landfilling activities. Secondly, a pile of black coal-like material was observed along the site's southern border. Elevated levels of benzene were measured in soil gas samples from the southern portion of the property. These two areas (not identified on Figure B-7) were recommended for investigation in the RFA (Ref. 2). However, affidavits submitted to NJDEP by owners of the neighboring property, from which the S-K property was subdivided for sale, swore no knowledge that the site was formerly used as a dump (Ref. 1). Accordingly, NJDEP did not require investigation of the property (Ref. 8).

References:

1. Letter from A. Dalto, Esq., to B. Strollo, NJDEP, re: Affidavit of Non-Applicability. Dated March 23, 1987.
2. RCRA Facility Assessment Narrative. Prepared by EPA. Dated November 7, 1988.
3. Field Investigation Assignment Report. Prepared by NJDEP. Dated March 6, 2001.
4. Letter from C. Bachman, S-K, to N. Nader, NJDEP, re: Secondary Containment Coating Installation. Dated January 31, 2002.
5. Letter from C. Bachman, S-K, to N. Nader, NJDEP, re: Secondary Containment Coating Response. Dated April 1, 2002.
6. RCRA Hazardous Waste Storage Permit Renewal Application. Prepared by S-K Corporation. Dated February 2005.
7. Hazardous Waste Facility Permit. Prepared by NJDEP. Issued July 20, 2006.
8. Email from P. Cole, NJDEP, to R. Jean, EPA, re: S-K South Plainfield. Dated August 12, 2014.

2. Is **groundwater** known or reasonably suspected to be “**contaminated**”¹ above appropriately protective “levels” (i.e., applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action, anywhere at, or from, the facility?

_____ If yes - continue after identifying key contaminants, citing appropriate “levels,” and referencing supporting documentation.

 X If no - skip to #8 and enter “YE” status code, after citing appropriate “levels,” and referencing supporting documentation to demonstrate that groundwater is not “contaminated.”

_____ If unknown - skip to #8 and enter “IN” status code.

Rationale:

As stated previously, the RFA for the S-K South Plainfield site was performed before the facility became operational (Ref. 2). Consequently, the RFA includes no recommendations for investigation or corrective action associated with the proposed SWMUs. The May 2005 HWF Permit Renewal Application (Ref. 3), which served as the basis for NJDEP’s issuance of the renewed permit, also noted that “there is no known indication to require this facility to conduct [another] Facility Assessment.” The application further notes that, based on the nature of the permitted units at this facility and the intention to eventually clean close the site, groundwater monitoring is not required. Nevertheless, the application commits S-K to environmental sampling in the vicinity of the waste management units during the closure process to confirm clean closure. Because the units remain operational at this time, no closure confirmation sampling has yet been conducted.

As noted in the response to Question 1, two additional findings were identified in the RFA: the mounded areas along the western and southern borders of the property, and the pile of black coal-like material (Ref. 2). Elevated levels of benzene were also measured in soil gas samples from the southern portion of the property. The NJDEP inspector recommended that these AOCs be investigated for potential environmental impacts, but affidavits submitted to NJDEP by owners of the neighboring property, from which the S-K property was subdivided for sale, swore no knowledge that the site was formerly used as a dump (Ref. 1). Accordingly, NJDEP did not require investigation of the property. Additionally, current aerial photography of the site, as shown in Google Earth, suggests that the coal-like material has been removed, and the site is now paved.

To date, site operations have not triggered RCRA investigation (Ref. 4). At this time, there is no reason to suspect that groundwater beneath the S-K South Plainfield site has been impacted by historic or current site operations.

¹ “Contamination” and “contaminated” describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriate “levels” (appropriate for the protection of the groundwater resource and its beneficial uses).

References:

1. Letter from A. Dalto, Esq., to B. Stollo, NJDEP, re: Affidavit of Non-Applicability. Dated March 23, 1987.
2. RCRA Facility Assessment Narrative. Prepared by EPA. Dated November 7, 1988.
3. RCRA Hazardous Waste Storage Permit Renewal Application – Revision 1. Prepared by S-K Corporation. Dated May 2005.
4. Email from P. Cole, NJDEP, to R. Jean, EPA, re: S-K South Plainfield. Dated August 12, 2014.

3. Has the migration of contaminated groundwater stabilized (such that contaminated groundwater is expected to remain within “existing area of contaminated groundwater”² as defined by the monitoring locations designated at the time of this determination)?

- _____ If yes - continue, after presenting or referencing the physical evidence (e.g., groundwater sampling/measurement/migration barrier data) and rationale why contaminated groundwater is expected to remain within the (horizontal or vertical) dimensions of the “existing area of groundwater contamination”².
- _____ If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the “existing area of groundwater contamination”²) - skip to #8 and enter “NO” status code, after providing an explanation.
- _____ If unknown - skip to #8 and enter “IN” status code.

Rationale:

This question is not applicable. See the response to Question 2.

² “Existing area of contaminated groundwater” is an area (with horizontal and vertical dimensions) that has been verifiably demonstrated to contain all relevant groundwater contamination for this determination, and is defined by designated (monitoring) locations proximate to the outer perimeter of “contamination” that can and will be sampled/tested in the future to physically verify that all “contaminated” groundwater remains within this area, and that the further migration of “contaminated” groundwater is not occurring. Reasonable allowances in the proximity of the monitoring locations are permissible to incorporate formal remedy decisions (i.e., including public participation) allowing a limited area for natural attenuation.

4. Does “contaminated” groundwater **discharge** into **surface water** bodies?

_____ If yes - continue after identifying potentially affected surface water bodies.

_____ If no - skip to #7 (and enter a “YE” status code in #8, if #7 = yes) after providing an explanation and/or referencing documentation supporting that groundwater “contamination” does not enter surface water bodies.

_____ If unknown - skip to #8 and enter “IN” status code.

Rationale:

This question is not applicable. See the response to Question 2.

5. Is the **discharge** of “contaminated” groundwater into surface water likely to be **“insignificant”** (i.e., the maximum concentration³ of each contaminant discharging into surface water is less than 10 times their appropriate groundwater “level,” and there are no other conditions (e.g., the nature, and number, of discharging contaminants, or environmental setting), which significantly increase the potential for unacceptable impacts to surface water, sediments, or ecosystems at these concentrations)?
- _____ If yes - skip to #7 (and enter “YE” status code in #8 if #7 = yes), after documenting: 1) the maximum known or reasonably suspected concentration³ of key contaminants discharged above their groundwater “level,” the value of the appropriate “level(s),” and if there is evidence that the concentrations are increasing; and 2) provide a statement of professional judgment/explanation (or reference documentation) supporting that the discharge of groundwater contaminants into the surface water is not anticipated to have unacceptable impacts to the receiving surface water, sediments, or ecosystem.
- _____ If no - (the discharge of “contaminated” groundwater into surface water is potentially significant) - continue after documenting: 1) the maximum known or reasonably suspected concentration³ of each contaminant discharged above its groundwater “level,” the value of the appropriate “level(s),” and if there is evidence that the concentrations are increasing; and 2) for any contaminants discharging into surface water in concentrations³ greater than 100 times their appropriate groundwater “levels,” the estimated total amount (mass in kg/yr) of each of these contaminants that are being discharged (loaded) into the surface water body (at the time of the determination), and identify if there is evidence that the amount of discharging contaminants is increasing.
- _____ If unknown - enter “IN” status code in #8.

Rationale:

This question is not applicable. See the response to Question 2.

³ As measured in groundwater prior to entry to the groundwater-surface water/sediment interaction (e.g., hyporheic) zone.

6. Can the **discharge** of “contaminated” groundwater into surface water be shown to be “**currently acceptable**” (i.e., not cause impacts to surface water, sediments or ecosystems that should not be allowed to continue until a final remedy decision can be made and implemented⁴)?

_____ If yes - continue after either: 1) identifying the Final Remedy decision incorporating these conditions, or other site-specific criteria (developed for the protection of the site’s surface water, sediments, and ecosystems), and referencing supporting documentation demonstrating that these criteria are not exceeded by the discharging groundwater; OR 2) providing or referencing an interim-assessment⁵, appropriate to the potential for impact, that shows the discharge of groundwater contaminants into the surface water is (in the opinion of a trained specialist, including an ecologist) adequately protective of receiving surface water, sediments, and ecosystems, until such time when a full assessment and final remedy decision can be made. Factors which should be considered in the interim-assessment (where appropriate to help identify the impact associated with discharging groundwater) include: surface water body size, flow, use/classification/habitats and contaminant loading limits, other sources of surface water/sediment contamination, surface water and sediment sample results and comparisons to available and appropriate surface water and sediment “levels,” as well as any other factors, such as effects on ecological receptors (e.g., via bio-assays/benthic surveys or site-specific ecological Risk Assessments), that the overseeing regulatory agency would deem appropriate for making the EI determination.

_____ If no - (the discharge of “contaminated” groundwater can not be shown to be “**currently acceptable**”) - skip to #8 and enter “NO” status code, after documenting the currently unacceptable impacts to the surface water body, sediments, and/or ecosystem.

_____ If unknown - skip to 8 and enter “IN” status code.

Rationale:

This question is not applicable. See the response to Question 2.

⁴ Note, because areas of inflowing groundwater can be critical habitats (e.g., nurseries or thermal refugia) for many species, appropriate specialist (e.g., ecologist) should be included in management decisions that could eliminate these areas by significantly altering or reversing groundwater flow pathways near surface water bodies.

⁵ The understanding of the impacts of contaminated groundwater discharges into surface water bodies is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration to be reasonably certain that discharges are not causing currently unacceptable impacts to the surface waters, sediments or eco-systems.

7. Will groundwater **monitoring**/measurement data (and surface water/sediment/ecological data, as necessary) be collected in the future to verify that contaminated groundwater has remained within the horizontal (or vertical, as necessary) dimensions of the “existing area of contaminated groundwater?”

_____ If yes - continue after providing or citing documentation for planned activities or future sampling/measurement events. Specifically identify the well/measurement locations which will be tested in the future to verify the expectation (identified in #3) that groundwater contamination will not be migrating horizontally (or vertically, as necessary) beyond the “existing area of groundwater contamination.”

_____ If no - enter “NO” status code in #8.

_____ If unknown - enter “IN” status code in #8.

Rationale:

This question is not applicable. See the response to Question 2.

8. Check the appropriate RCRIS status codes for the Migration of Contaminated Groundwater Under Control EI (event code CA750), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (attach appropriate supporting documentation as well as a map of the facility).

 X YE - Yes, "Migration of Contaminated Groundwater Under Control" has been verified at the at the S-K Corporation site, EPA ID# NJD982270506, located at 116 Skyline Drive, South Plainfield, Middlesex County, New Jersey. This determination will be re-evaluated when the Agency becomes aware of significant changes at the facility.

 NO - Unacceptable migration of contaminated groundwater is observed or expected.

 IN – Based on a review of the information contained in this EI determination, more information is needed to make a determination.

Completed by:

Michele Benchouk
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Date: _____

Reviewed by:

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Date: _____

Nidal Azzam, Chief
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Date: _____

Approved by:

Adolph Everett, Chief
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EPA Region 2

Date: _____

Locations where references may be found:

References reviewed to prepare this EI determination are identified after each response. Reference materials are available at USEPA, Region 2 offices.

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